

## Abstract

To provide a three-phase synchronous reluctance motor which allows its stator to be formed compact by means of reduction in the width of a part of a back yoke portion of a stator while avoiding excessive increase in the magnetic resistance of the magnetic path of the back yoke portion. The includes a rotor (200) and a stator (100) having a plurality of teeth (103) formed in an inner face thereof along a peripheral direction and in opposition to the rotor (200), six of the teeth being in opposition to one of a plurality of rotor magnetic poles provided in the rotor, the stator having stator windings by a coil pitch corresponding to five teeth of the six teeth. At a position in a back yoke portion (104) of the stator corresponding to a tooth (103) adjacent a tooth located between an adjacent pair of the stator windings which form magnetic poles in a same phase and with different polarities in a three-phase drive mode, there is provided at least one width reducing portion (101) which renders a width of a magnetic path of the back yoke portion (104) of the stator reduced relative to a magnetic patch of the back yoke portion corresponding to the other teeth.